ATILIM UNIVERSITY
DEPARTMENT OF COMPUTER ENGINEERING

CMPE 226 – DATA STRUCTURES
HOMEWORK I

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Due Date: April 3, 2025

In this assignment, you will develop a food ordering system that organizes food items under different categories using linked lists. The system should:

- Store food items categorized into *Appetizers, Main Course, and Desserts*.
- Read menu items from a file (**menu.txt**) and store them in a *linked list-based structure*.
- Allow food items to have attributes; *name, price, and availability*.
- Display the full menu in a structured format.

Requirements

- Use *linked lists* to store food items under each category.
- Use an *array of categories*, where each category is a linked list object.
- Read the menu data from a text file (**menu.txt**).
- The file format will have *category, item name, price, and availability*.
- Implement functions to *add food items, display the menu, and read from a file*.

- The assignment should be implemented in **C++**.

The menu file (**menu.txt**) will have the following structure:

```
Appetizers "Nachos" 5.99 1

Appetizers "Spring Rolls" 4.49 1

Main Course "Steak" 14.99 1

Main Course "Pasta" 10.99 1

Desserts "Brownie" 4.99 0

Desserts "Cheesecake" 6.99 1
```

Each line contains:

- **Category** (Appetizers, Main Course, Desserts)
- **Food Item Name**
- **Price**
- **Availability** (1 for available, 0 for not available)

Expected Output:

Category: Appetizers
- Nachos ($5.99) [Available]
- SpringRolls ($4.49) [Available]

Category: Main Course
- Steak ($14.99) [Available]
- Pasta ($10.99) [Available]

Category: Desserts
- Cheesecake ($6.99) [Available]
- Brownie ($4.99) [Not Available]

Note:

- Use the linked list header file in your program
- Upload both **your program, linked list header file and menu.txt** to Moodle
- Write your name and student id in your files as a comment.

The grading of the homework will be based on:

1. Please **do not** upload **.exe** file, otherwise you will get zero.
2. Homework submitted via e-mail will be ignored.
3. This is not a group work, so if anyone cheats or has a high similarity percentage (above 90%), will get zero.
4. If your code does not compile, your program will be evaluated over 50 pts.
5. Late submissions will not be graded.